

ABSTRACT

A method of formation a gate in a semiconductor device includes forming a gate oxide layer and a sacrificial layer on a semiconductor substrate. The sacrificial layer is then selectively etched to form a sidewall opening. Next, a polycrystalline silicon layer is formed on an area of the gate oxide layer exposed through the sidewall opening and on the sacrificial layer. Anisotropic etching of the polycrystalline silicon layer is performed such that sidewall gates are formed by remaining portions of the polycrystalline silicon layer on sidewalls of the sidewall opening, a width of the sidewall gates corresponding to a desired width of a gate. The sacrificial layer is removed following etching of the polycrystalline silicon layer.